CALET: Flight Operations and Data Analysis

Completed Technology Project (2016 - 2020)

Project Introduction

The CALET (CALorimetric Electron Telescope) Mission to the ISS has been under development for the past decade as a Japanese led international mission involving Italy and the United Sates. Over the past five years we have worked with our international partners to ready CALET for launch and to prepare the systems needed for a successful experiment at the frontiers of Particle Astrophysics. CALET will extend measurements of the cosmic ray electron, nuclei and gamma-ray components into the trans-TeV energy region, beyond the energy reach of current experiments, to investigate possible new astrophysics at the highest energies. CALET is now ready for launch on HTV-5, having completed environmental testing (Acoustic, T/V, EMI/EMC) at the JAXA space center. Working with the international team, we have developed a detailed Instrument Model, have participated in accelerator testing of CALET components, and have developed the detailed formats and processing scheme for the flight data. Moreover, we have established the US CALET Data Center at Louisiana State University, have acquired the hardware, developed the software and verified the connectivity with the Waseda Operations Center in Japan. The US Data Center will distribute data to the US investigators, will process and analyze the CALET data stream to obtain science results, and will prepare the CALET data products for archiving at the HEASRC facility at GSFC. Under this proposal we ask for support of the first portion of the flight operations and data processing/analysis for the CALET mission. Launch is anticipated before the end of CY15, allowing the US team to transition from pre-launch to on-orbit operations and to be a major partner in this new particle astrophysics mission. The US Team consists of Louisiana State University (lead institution), Goddard Space Flight Center, Washington University in St. Louis, and The University of Denver.

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Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Responsible Program:

Astrophysics Research and Analysis

Project Management

Program Director:

Michael A Garcia

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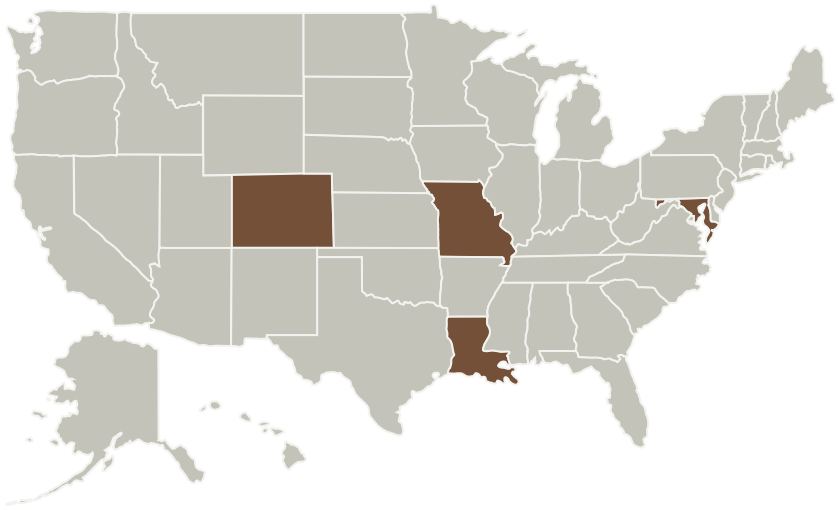
Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Louisiana State University and Agricultural & Mechanical College(LSU)	Supporting Organization	Academia	Baton Rouge, Louisiana

Primary U.S. Work Locations	
Colorado	Louisiana
Maryland	Missouri

Project Management *(cont.)*

Program Manager:

Dominic J Benford

Principal Investigator:

John P Wefel

Co-Investigators:

Brian F Rauch
Alexander A Moiseev
John F Krizmanic
John W Mitchell
T G Guzik
Kenichi Sakai
Martin H Israel
Winona Ward
Jonathan F Ormes
Makoto Sasaki
Walter R Binns
Thomas Hams
Amir Javaid
Henric S Krawczynski
Michael L Cherry

Technology Areas

Primary:

- TX08 Sensors and Instruments
  - TX08.3 In-Situ Instruments and Sensors
    - TX08.3.1 Field and Particle Detectors

Target Destination

Outside the Solar System